

**AIR QUALITY
PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
CONSTRUCTION PERMIT**

PERMIT NUMBER: CP05-0050

FACILITY INFORMATION:

Firm: Ag Processing, Inc - Soybean Processing Facility

Facility ID No.: 72698

Mailing Address:

2801 E 7th Street
Hastings, NE 68901

Physical Site Address:

2801 E 7th Street
Hastings, NE 68901

PROJECT DESCRIPTION:

Project Name: 382 MMBtu CFB Coal Boiler

New Permit or Superseding Previous: New PSD Permit

Standard Industrial Classification (SIC) Code: 2075 (Soybean Oil Mills)

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction and modification of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This Construction Permit approves the proposed construction of a 382 MMBtu/hr CFB Coal Boiler and ancillary equipment.

The permit holder, owner and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The permit is valid for the life of the equipment unless specifically superseded by subsequent permit(s).

This permit may contain abbreviations and symbols of units of measure, which are defined in 40 CFR Part 60.3. Other abbreviations may include, but are not limited to, the following:

Acfm	Actual cubic feet per minute	MMBtu	Million British thermal units
AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources	NAAQS	National Ambient Air Quality Standards
BACT	Best Available Control Technology	NDEQ	Nebraska Department of Environmental Quality
CAM	Compliance Assurance Monitoring	NSPS	New Source Performance Standards

CEM	Continuous Emissions Monitor		NO_x	Nitrogen Oxides
CFR	Code of Federal Regulations		OMB	Office of Management and Budget
CO	Carbon Monoxide		OP	Operating Permit
COM	Continuous Opacity Monitor		PM	Particulate Matter
CP	Construction Permit		PM₁₀	Particulate Matter less than or equal to 10 micrometers in aerodynamic diameter
EP	Emission Point		PSD	Prevention of Significant Deterioration
FIRE	Factor Information and Retrieval System		Scfm	Standard cubic feet per minute
gr/dscf	Grains per dry standard cubic foot		SIP	State Implementation Plan
HAP(s)	Hazardous Air Pollutant(s)		SO₂	Sulfur Dioxide
H₂S	Hydrogen Sulfide		SO_x	Sulfur Oxides
LAER	Lowest Achievable Emission Rate		TRS	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology		VOC(s)	Volatile Organic Compound(s)

PERMIT CONDITIONS

This permit is issued with the following conditions under the authority of Title 129 - Nebraska Air Quality Regulations as amended March 14, 2006:

1. GENERAL PERMIT CONDITIONS

- I. This permit is not transferable to another source or location. {Title 129, Chapter 17}
- II. Holding of this permit does not relieve the owner/operator of the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action or permit revocation. {Title 129, Chapter 41 & Chapter 17, Section 011}
- III. Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations. {Title 129, Chapter 37}
- IV. Any owner/operator who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. {Title 129, Chapter 17, Section 006}
- V. If the owner/operator wishes to make changes at the facility that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the applicant and reviewed by the Department in issuance of this permit), or an adverse change to the predicted air quality impacts, the source must receive approval from the Department before the change(s) can be made. {Title 129, Chapter 17, Section 007, & 008}
- VI. This approval to modify the source will lapse if a continuous program of construction is not commenced within 18 months after the date of issuance of this permit, if construction is discontinued for a period of 18 months or more, unless the owner/operator makes a showing that more time is needed due to the complexity of the project. {Title 129, Chapter 17, Section 012}
- VII. The owner/operator of the source shall provide a notification to the Department of the date of construction, reconstruction or modification commenced, postmarked no later than 30 days after such date, and of the actual date of initial startup of operation, postmarked within 15 days after such date. {Title 129, Chapter 17, Section 012}
- VIII. The permittee shall allow the Department, EPA or an authorized representative, upon presentation of credentials to:
 - (A) Enter upon the permittee's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted or records are kept, for the

- purpose of ensuring compliance with the permit or applicable requirements;
- (B) Have access to and copy, at reasonable times, any records, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (C) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (D) Sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.
- IX. When requested by the Department, the permittee shall submit completed emission inventory forms for the preceding year to the Department by March 31 of each year. {Title 129, Chapter 6}
- X. Open fires are prohibited except as allowed by Title 129, Chapter 30.
- XI. Particulate Matter – General Requirements: {Title 129, Chapter 32}
- (A) The permittee shall not cause or permit the handling, transporting or storage of any material in a manner, which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.
 - (B) The permittee shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover
- XII. If and when the Director declares an air pollution episode as defined in Title 129, Chapter 38, Sections 003.01B, 003.01C, or 003.01D, the source shall immediately take all required actions listed in Title 129, Appendix I until the Director declares the air pollution episode terminated.
- XIII. This permit may be revised (reopened and reissued) or revoked for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. Conditions under which this permit will be revised or revoked for cause, include but are not limited to: {Title 129, Chapter 15, Section 006}
- (A) A determination by the Director, or the Administrator of EPA that:
 - (1) The permit must be revised to ensure compliance with the applicable requirements;
 - (2) The permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit.
 - (B) The existence at the facility of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the permittee to agree to an enforceable schedule of compliance to resolve the noncompliance;

- (C) The submittal by the permittee of false, incomplete, or misleading information to the Department or EPA;
- (D) A determination by the Director that the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or
- (E) The failure of the permittee to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the EPA.

2. FACILITY-WIDE SPECIFIC CONDITIONS

I. Permitted Emissions associated with this modification:

Regulated Pollutant	Emissions (tons/year)
Particulate Matter (PM)	80.35
Particulate Matter smaller than or equal to 10 microns (PM ₁₀)	74.96
Sulfur Dioxide (SO ₂)	184.05
Oxides of Nitrogen (NO _x)	133.85
Carbon Monoxide (CO)	250.97
Volatile Organic Compounds (VOC)	4.96
Sulfuric Acid (H ₂ SO ₄)	6.53
Hazardous Air Pollutants (HAP):	
Hydrochloric acid (HCl, CAS #7647010)	33.46
Hydrofluoric acid (HF, CAS #7664393)	2.84
Total HAPs	37.84

II. Performance Testing: The performance tests required in the permit must be completed and submitted to the Department as follows: {Title 129, Chapter 34}

- (A) Unless otherwise specified in this permit, the performance tests shall be conducted within 60 days after reaching maximum capacity but not more than 180 days after the start-up of operations.
- (B) Testing methods shall be from 40 CFR 60 Appendix A, or other method approved by the Department.
- (C) An emission testing protocol shall be submitted to the Department at least 45 days prior to testing.
- (D) The owner or operator of a source shall provide the Department 30 days notice prior to testing to afford the Department an opportunity to have an observer present.

- (E) The permittee shall monitor the operating parameters for process and control equipment during the performance testing required in the permit (e.g., production rate, flow rate and pressure differential during testing of the scrubber). The operating parameters shall be submitted with the test results.
 - (F) A certified written copy of the test results signed by the person conducting the test shall be provided to the Department within 45 days of completion of the test.
- III. Recordkeeping: Records of all measurements, results, inspections, and observations as required to ensure compliance with this permit shall be maintained as follows:
- (A) Calculations and records shall be completed no later than the 15th day of each calendar month and shall include all information through the previous calendar month, unless otherwise specified in this permit.
 - (B) Records shall be kept on-site for a minimum of five years unless otherwise specified in this permit.
 - (C) These records shall be clear and readily accessible to Department representatives.
 - (D) Copies of all notifications, reports, test results and plans submitted to the Department shall be maintained.
 - (E) Calibration records for all operating parameter monitoring equipment shall be maintained.
 - (F) Manufacturer's design, installation, operation, specification, and maintenance instruction documents for the permitted equipment shall be kept for the life of the equipment.
 - (G) Site survey or similar documentation demonstrating compliance with the stack height limitations per Conditions 2.IV. and 3.
- IV. NAAQS/PSD Increment: The following conditions support the demonstration of compliance for NAAQS and PSD Increment modeling: {Title 129, Chapters 4 and 19}
- (A) The stack heights above ground shall not be less than the heights specified in Condition 3 (Emission Point Summary Table of Contents). A site survey or similar documentation demonstrating compliance with the stack height requirements shall be kept on site and a copy submitted to the Department within 180 days after start-up of operations of the new equipment
 - (B) The source shall sufficiently restrict public access to the facility at the ambient air boundary relied upon in the modeling analysis for the NAAQS compliance demonstration.
 - (1) An ambient air restriction plan detailing the measures for restricting public access (such as fencing) shall be submitted to the Department at least 90 days prior to initial startup of operations. The public access restrictions must be in place prior to initial startup of operations.

- (2) A site survey or similar documentation demonstrating compliance with the ambient air restriction plan shall be kept on site and a copy submitted to the Department within 180 days after initial startup of operations. The site survey or similar documentation shall provide sufficient detail to verify that the ambient air restriction plan has been fully implemented.
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3. EMISSION POINT SUMMARY - TABLE OF CONTENTS

EP No.	EP Name/Description	New/Modified	Minimum Stack Height (ft)
401	Coal Boiler	New	185
402	Coal Dump & Handling	New	80
403	Coal Silo Dust Collector	New	143
404	Fly Ash Handling and Loadout	New	40
405a	Fly Ash Silo Bin Vent	New	10
405b	Fly Ash Silo Bin Vent	New	10
405.1	Fly Ash Dust Collector	New	85
406	Evaporative Cooler	New	17
408	Limestone Bunker	New	115
408.1	Recycle Bunker Bin Vent	New	115
409	Recycle Surge Bin Vent	New	45
410	Road Emissions from Coal Trucks	New	N/A

EP# 401**EP Name: CFB Coal Boiler**

Emission Point Description – Provides steam for the soybean processing facility, oil refinery and corn plant. Maximum Heat Input Rate of 382 MMBtu/hour

I. Permitted Limits:

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or Operating Parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required ⁽¹⁾ (Yes/No)
PM/PM ₁₀	0.015 lbs/MMBtu (filterable) ⁽¹¹⁾ 0.041 lbs/MMBtu (filterable + condensable) ⁽¹¹⁾ 0.025 lbs/MMBtu ⁽²⁾ 0.03 lb/MMBtu (filterable) ⁽³⁾	Title 129, Chapter 19 (PSD-BACT) Title 129, Chapter 4 (NAAQS) 40 CFR 63, Subpart DDDDD NSPS Subpart Db	Yes
NO _x ⁽⁴⁾	0.08 lb/MMBtu ^{(5),(6),(12)} 30.56 lb/hour ^{(7),(12),(15)} 0.20 lb/MMBtu ^{(3),(13)}	Title 129, Chapter 19 (PSD-BACT) Title 129, Chapter 19 (PSD) NSPS Subpart Db	Yes
SO _x ⁽⁴⁾	0.11 lbs/MMBtu ⁽¹³⁾ 1.2 lb/MMBtu ^{(3),(13)} 44 lbs/hour ⁽¹⁴⁾	Title 129, Chapter 19 (PSD-BACT) NSPS Subpart Db Title 129, Chapter 4 (NAAQS)	Yes
CO ⁽⁴⁾	0.15 lbs/MMBtu ^{(5),(6),(12)} 57.30 lb/hour ^{(7),(12),(15)} 400 ppm @ 7% O ₂ ⁽⁶⁾	Title 129, Chapter 19 (PSD-BACT) Title 129, Chapter 19 (PSD) 40 CFR 63, Subpart DDDDD	Yes
VOC	1.35 lbs/hour ⁽¹¹⁾	Title 129, Chapter 19 (PSD-BACT)	Yes
Fluoride (as HF)	0.0017 lbs/MMBtu ⁽¹¹⁾	Title 129, Chapter 19 (PSD-BACT)	Yes
H ₂ SO ₄	0.0039 lbs/MMBtu ⁽¹¹⁾	Title 129, Chapter 19 (PSD-BACT)	Yes
TSM ⁽⁸⁾	0.0003 lbs/MMBtu ⁽¹¹⁾	40 CFR 63, Subpart DDDDD	Yes
HCl	0.02 lbs/MMBtu ⁽¹¹⁾	40 CFR 63, Subpart DDDDD	Yes
Mercury Compounds	0.000003 lbs/MMBtu ⁽¹¹⁾	40 CFR 63, Subpart DDDDD	Yes
Opacity ⁽⁹⁾	20% ⁽¹⁰⁾⁽¹³⁾	NSPS Subpart Db	Yes

⁽¹⁾ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

⁽²⁾ This limit may be used as a surrogate for Total Selected Metals (TSM). Limit is for filterable particulates.

⁽³⁾ Compliance with NSPS limits can be demonstrated by compliance with PSD-BACT limits.

⁽⁴⁾ Compliance with the emission standards shall be demonstrated through the use of Continuous Emission Monitoring Systems (CEMS)

⁽⁵⁾ Limit in effect when boiler load is between 70% and 100% of rated capacity (267.4 to 382 MMBtu/hour)

⁽⁶⁾ Compliance with this standard is determined on a 30-day rolling average basis.

⁽⁷⁾ Limit is in effect when boiler load is less than 70% of rated capacity (less than 267.4 MMBtu/hour)

⁽⁸⁾ TSM (Total Selected Metals) is defined as the combination of the following metallic HAPs: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium compounds.

⁽⁹⁾ Compliance with the emission standards shall be demonstrated through the use of Continuous Opacity Monitoring Systems (COMS).

⁽¹⁰⁾ Opacity shall not exceed 20% (6 minute average), except for one (1) 6-minute period per hour of not more than 27% opacity.

- (11) Standard is expressed as an average of 3 test runs.
- (12) Excludes periods of startup and shutdown
- (13) Includes periods of startup, shutdown and malfunction.
- (14) Compliance with this standard is determined on a 3-hour rolling average basis.
- (15) Compliance with this standard is determined on a 48-hour rolling average basis.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance
Limestone Injection	Control equipment installation, CEM
NH ₃ injection	Control equipment installation, CEM

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
 - a. The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
 - b. The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
 - c. Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
 - d. Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted and documented to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.
 - e. Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI.
 - f. The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.
- (B) The source shall install, calibrate, maintain, and operate a CEMS or approved alternative in accordance with the specific NSPS Subpart Db for measuring SO₂, CO, NO_x emissions and a COMS for measuring opacity.

III. BACT, NSPS and NESHAP Requirements:

Rule Citation	Specific Requirement
40 CFR 60.40b; Title 129, Chapter 18, Section 001.01 and 001.22	This emission unit is subject to NSPS Subpart Db, for Industrial-Commercial-Institutional Steam Generating units and Subpart A, in its entirety.
40 CFR 63.7480; Title 129, Chapter 28, Section 001.90	This emission unit is subject to NESHAP, Subpart DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters. This emission unit is identified as a New, Large Solid Fuel Boiler.

IV. Recordkeeping Requirements:

In accordance with Condition II. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop readings for the baghouse, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted.
For the baghouse: filter replacement records including filter position, type, and date of filter installation.
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.

In accordance with Condition III. above, the following records are required:

Specific Records
Records demonstrating compliance with NSPS, Subpart Db (40 CFR 60.49b)
Records demonstrating compliance with NESHAP, Subpart DDDDD (40 CFR 63.7480)

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission test report	Within 45 days of emission testing
Notifications and reports as required by NSPS Subpart A (40CFR 60.7)	As specified in NSPS, Subpart A
Notifications and reports as required by NSPS, Subpart Db (40 CFR 60.49b)	As specified in NSPS, Subpart Db
Notifications and reports as required by NESHAP, Subpart DDDDD (40 CFR 63.7480)	As specified in NESHAP, Subpart DDDDD

VI. Other Applicable Requirements:

- (A) Only sub bituminous coal shall be burned in the boiler. {Chapter 4, 19 and 24}

EP# 402 EP Name: Coal Dump and Handling**Emission Point Description – Coal receiving and handling equipment****Associated Emission Unit(s) - EU 402****I. Permitted Limits:**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.686 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.686 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes
Opacity	<20% Opacity	40 CFR 60.252(c)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted and recorded to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may necessitate corrective action. Corrective action shall be taken

immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

Rule Citation	Specific Limits or Conditions
40 CFR 60.1; Title 129, Chapter 18, Section <u>001.01</u>	New Source Performance Standards - General Provisions, Subpart A
40 CFR 60.250; Title 129, Chapter 18, Section <u>001.08</u>	New Source Performance Standards - Coal Preparation Plants, Subpart Y

IV. Recordkeeping Requirements: In accordance with Condition II. and III. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made
Records demonstrating compliance with NSPS, Subparts A and Y

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission test report	Within 45 days of emission testing
Notifications and reports required by NSPS, Subpart A (40 CFR 60.7)	As specified in NSPS - Subpart A
Notifications and reports required by NSPS, Subpart Y (40 CFR 60.250)	As specified in NSPS - Subpart Y

VI. Other Applicable Requirements:

None.

EP# 403**EP Name: Coal Silo Dust Collector****Emission Point Description – Coal handling emissions associated with the Coal Silo****Associated Emission Unit(s) - EU 403****I. Permitted Limits:**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.039 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.039 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes
Opacity	<20% Opacity	40 CFR 60.252(c)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted and recorded to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other

indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

Rule Citation	Specific Limits or Conditions
40 CFR 60.1; Title 129, Chapter 18, Section <u>001.01</u>	New Source Performance Standards - General Provisions, Subpart A
40 CFR 60.250; Title 129, Chapter 18, Section <u>001.08</u>	New Source Performance Standards - Coal Preparation Plants, Subpart Y

IV. Recordkeeping Requirements: In accordance with Condition II. and III. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made
Records demonstrating compliance with NSPS, Subparts A and Y

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission Test Report	Within 45 days of emission testing
Notifications and reports required by NSPS, Subpart A (40 CFR 60.7)	As specified in NSPS - Subpart A
Notifications and reports required by NSPS, Subpart Y (40 CFR 60.250)	As specified in NSPS - Subpart Y

VI. Other Applicable Requirements:

None.

EP# 404 EP Name: Fly Ash Handling and Loadout**Emission Point Description – Emissions associated with fly ash handling and loadout emissions****Associated Emission Unit(s) - EU 404****I. Permitted Limits:**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.077 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.077 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted and recorded to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may necessitate corrective action. Corrective action shall be taken

immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

None.

IV. Recordkeeping Requirements: In accordance with Condition II. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission Test Report	Within 45 days of emission testing

VI. Other Applicable Requirements:

None.

EP# 405A and 405B EP Name: Fly Ash Silo Bin Vents

Emission Point Description – Emissions associated with fly ash handling and loadout emissions. Two vents controlled by a single baghouse.

Associated Emission Unit(s) - EU 405A and 405B

I. Permitted Limits:

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.116 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.116 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted and recorded to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other

indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

None.

IV. Recordkeeping Requirements: In accordance with Condition II. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission Test Report	Within 45 days of emission testing

VI. Other Applicable Requirements:

None.

EP# 406 EP Name: Closed Circuit Evaporative Cooler Fans**Emission Point Description – Evaporative cooler for the boiler with 2 outlet fans****Associated Emission Unit(s) - EU 406****I. Permitted Limits**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
TDS concentration	5,000 ppm per sampling event	Title 129, Chapters 4 (NAAQS) and 19 (PSD)	Yes, Monthly
Drift loss	0.001 %	Title 129, Chapters 4 (NAAQS) and 19 (PSD)	No

II. Control Method or Equipment Requirements:

- (A) The evaporative cooler shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the cooling towers shall be kept on site and readily available to Department representatives. (Title 129, Chapters 4 and 19)

III. BACT, NSPS and NESHAP Requirements:

None.

IV. Recordkeeping Requirements: In accordance with Condition I above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted with a description of the maintenance and/or preventive action conducted.
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made.
Records documenting the monthly TDS test results.
Manufacturer's drift loss guarantee to demonstrate compliance with Condition I for EP 406. Keep this document for the life of equipment.

V. Reporting or Submittal Requirements:

None.

VI. Other Applicable Requirements:

- (A) A TDS sample shall be collected from the evaporative cooler and tested at a minimum of once per calendar month. (Title 129, Chapters 4 and 19)

EP# 408**EP Name: Limestone Bunker Bin Vent****Emission Point Description – Limestone storage bunker with vent emissions controlled by a baghouse****Associated Emission Unit(s) - EU 408****I. Permitted Limits:**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.039 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.039 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may necessitate corrective action. Corrective action shall be taken immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

None.

IV. Recordkeeping Requirements: In accordance with Condition II. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission Test Report	Within 45 days of emission testing

VI. Other Applicable Requirements:

None.

EP# 408.1 EP Name: Recycle Bunker Bin Vent

Emission Point Description – Storage Bunker vent for fuel recycle controlled by a baghouse

Associated Emission Unit(s) - EU 408.1

I. Permitted Limits:

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.039 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.039 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes
Opacity	<20% Opacity	40 CFR 60.252(c)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may

necessitate corrective action. Corrective action shall be taken immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

Rule Citation	Specific Limits or Conditions
40 CFR 60.1; Title 129, Chapter 18, Section <u>001.01</u>	New Source Performance Standards - General Provisions, Subpart A
40 CFR 60.250; Title 129, Chapter 18, Section <u>001.08</u>	New Source Performance Standards - Coal Preparation Plants, Subpart Y

IV. Recordkeeping Requirements: In accordance with Condition II. and III. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made
Records demonstrating compliance with NSPS, Subparts A and Y

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emissions test report	Within 45 days of emission testing
Notifications and reports required by NSPS, Subpart A (40 CFR 60.7)	As specified in NSPS - Subpart A
Notifications and reports required by NSPS, Subpart Y (40 CFR 60.250)	As specified in NSPS - Subpart Y

VI. Other Applicable Requirements:

None.

EP# 409 EP Name: Recycle Surge Bin Vent**Emission Point Description – Surge Bunker vent for fuel recycle controlled by a baghouse****Associated Emission Unit(s) - EU 409****I. Permitted Limits:**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits	Performance Testing Required¹ (Yes/No)
PM	0.039 lbs/hr	Title 129, Chapter 19 (PSD)	Yes
PM ₁₀	0.039 lbs/hr	Title 129, Chapter 4 (NAAQS)	Yes
Opacity	<20% Opacity	40 CFR 60.252(c)	Yes

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

II. Control Method or Equipment Requirements:

Control Equipment or Method	Compliance Demonstration (Operating Limits, Engineer Estimates, Stack Test, Vendor Guarantee, Parametric Monitoring, Mass Balance, CEM, PEM, fugitive dust plan, Control Equipment installation, operation and maintenance)
Baghouse	Control equipment installation, operation & maintenance

- (A) The baghouse shall be operated whenever the associated emission units are in operation.
- (B) The baghouse shall be properly installed, operated and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the baghouse shall be kept on site and readily available to Department representatives.
- (C) The baghouse shall be equipped with an operational pressure differential indicator. The pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating. The pressure indicator shall be properly installed, operated, calibrated, and maintained. The manufacturer's operation and maintenance manual, or its equivalent, detailing proper operation, inspection and maintenance of the pressure differential indicator shall be kept on site and readily available to Department representatives.
- (D) Baghouse filter bags/cartridges are to be inspected and/or replaced according to the manufacturer's documentation or more frequently as indicated by pressure differential indicator readings or other indication of unit failure.
- (E) Routine observations (at least once each day during daylight hours of baghouse operation) shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, atypical pressure differential readings, or other indications, which may

necessitate corrective action. Corrective action shall be taken immediately if necessary.

- (F) Collected waste material from the baghouse shall be handled, transported, and stored in a manner that ensures compliance with Condition 1.XI (Title 129, Chapter 32).
- (G) The source shall maintain on-site an inventory of spare bags/cartridges of each type used to ensure rapid replacement in the event of bag/cartridge failure.

III. BACT, NSPS and NESHAP Requirements:

Rule Citation	Specific Limits or Conditions
40 CFR 60.1; Title 129, Chapter 18, Section <u>001.01</u>	New Source Performance Standards - General Provisions, Subpart A
40 CFR 60.250; Title 129, Chapter 18, Section <u>001.08</u>	New Source Performance Standards - Coal Preparation Plants, Subpart Y

IV. Recordkeeping Requirements: In accordance with Condition II. and III. above, the following records are required:

Specific Records
Records documenting when routine observations were conducted with a description, including pressure drop, and any atypical observations.
Records documenting when routine maintenance and preventive actions were conducted, including a description of the maintenance and/or preventative action conducted
Filter replacement records including filter position, type, and date of filter installation
Records documenting equipment failures, malfunctions, or other variations, including time of occurrence, remedial action taken, and when corrections were made
Records demonstrating compliance with NSPS, Subparts A and Y

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Emission test report	Within 45 days of emission testing
Notifications and reports required by NSPS, Subpart A (40 CFR 60.7)	As specified in NSPS - Subpart A
Notifications and reports required by NSPS, Subpart Y (40 CFR 60.250)	As specified in NSPS - Subpart Y

VI. Other Applicable Requirements:

None.

EP# 410**EP Name: Haul Roads****Emission Point Description – Fugitive Emissions from Haul Roads****Associated Emission Unit(s) EU 410****I. Permitted Limits**

This emission point shall conform to the emissions limits and the specifications listed below:

Pollutant or operating parameter	Permitted Limits with Units of Measure	Basis for Permit Limits (If applicable)	Performance Testing Required (Yes/No)
Silt loading	0.40 g/m ²	Title 129, Chapter 4, 19 and 32	Yes ^{1,2}

¹ Per Condition 2.II., a testing protocol must be submitted 45 days prior to testing that includes the pollutant(s), test method(s), run time, and averaging method.

² Silt loading performance tests shall be conducted at least once per calendar quarter.

II. Control Method or Equipment Requirements:

The owner or operator shall develop, maintain, and implement a Fugitive Dust Control Plan (FDCP) to control emissions from haul roads to comply with Conditions I.XI and the silt loading limit.

III. BACT, NSPS and NESHAP Requirements:

None.

IV. Recordkeeping Requirements: In accordance with Condition II above, the following records are required:

Specific Records
Most recent version of the FDCP shall be kept on site.
Records documenting use of fugitive dust control measures on haul roads, daily plant surveys, corrective actions, and silt loading test results, to demonstrate compliance with Conditions 1.XI and the silt loading limit

V. Reporting or Submittal Requirements:

Specific Reports or Submittals	Due Date/Frequency
Fugitive Dust Control Plan	Submit to the Department within 30 days of startup and within 30 days of each revision

VII. Other Applicable Requirements:

- A. All routes for truck traffic at the facility are paved.
- B. For each day of operation, the owner or operator shall conduct a survey of the plant property and haul roads to determine if visible fugitive emissions are being generated and leaving plant property.

- C. Implementation of fugitive dust controls shall be taken upon observation of visible fugitive emissions leaving plant property or more frequently in accordance with the FDCP.
- D. Documentation of all fugitive dust control measures implemented and daily surveys shall be maintained in a log accompanying the FDCP.

END OF EMISSION POINT CONDITIONS

The undersigned issues this document on behalf of the Director in accordance with Title 129 – Nebraska Air Quality Regulations.

9/11/06

Date

{Original Signed}

Shelley Kaderly
Air Quality Division Administrator

FACT SHEET

Ag Processing, Inc. Soybean Processing Plant
2801 East 7th Street
Hastings, Nebraska 68901

September 11, 2006

DESCRIPTION OF THE FACILITY OR ACTIVITY:

The applicant, Ag Processing Inc (AGP) was issued a construction permit June 19, 1998 to construct a soybean processing plant to be located at 2801 E. 7th Street, Hastings, Nebraska (about 1 1/2 miles East of Hastings). This construction permit was revised on October 21, 1999, and again by Administrative Amendment on April 30, 2002. On September 27, 2004, AGP received a revised construction permit for a proposed expansion of the soybean processing and vegetable oil refinery facilities (collectively referred to as the soybean processing facility) that would double the existing capacity. The 2004 permit was revised and reissued on April 17, 2006.

This permitting action allows for the construction of a coal-fired boiler at the soybean processing facility (Facility ID #72698) to primarily supply steam to this facility and in part to the adjacent corn plant (Facility ID #62574), also owned by AGP. No increase in plant capacity (corn plant, soybean processing plant or vegetable refinery) is included in this modification.

The soybean processing facility, Standard Industrial Classification (SIC) 2075, is not one of the 28 listed major source categories subject to the 100 tons per year Prevention of Significant Deterioration (PSD) threshold level, and is therefore subject to the 250 ton per year PSD threshold level. Based on the permitted plant expansion in 2004 and revision in 2006, the facility is considered a major PSD facility for future modifications. Therefore, the addition of the coal-fired boiler is subject to PSD review and Best Available Control Technology requirements are implemented.

AGP proposes to construct a circulating fluidized bed (CFB) coal boiler with limestone injection. The heat input capacity is 382 Million British Thermal Units (MMBTu) per hour and the fuel is limited to coal. Low sulfur coal from the Powder River Basin (sub bituminous) will be the primary fuel for the CFB boiler.

Other proposed modifications identified in the permit application consist of the addition of the following support equipment: coaling handling and storage silos, fly ash handling and storage silo, an evaporative cooler, and limestone storage bunker.

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

Primary emissions from the proposed boiler consist of particulate matter (PM), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), nitrogen oxides (NO_x), Sulfur dioxide (SO₂), carbon monoxide (CO), volatile organic compounds (VOC) and hazardous air pollutants (HAPs) due to the combustion of coal. Additional emissions of PM and PM₁₀ are generated from the handling and processing of coal, limestone and fly ash and haul road traffic. In the discussion on particulate emissions it is assumed that all PM is PM₁₀ unless otherwise indicated.

Coal Boiler Operations

The emissions from the coal boiler (EP-401) are controlled by limestone addition, NH₃ injection (selective non-catalytic reduction), and baghouses. The coal receiving is conducted in an enclosure and emissions from the receiving and handling operations are controlled by three baghouses/vent baghouses (EP-402, 408.1 and 409). Handling operations include coal cleaning and crushing operations. The coal storage silo is also controlled by a baghouse (EP-403). The boiler ash recovery, transfer and storage systems are controlled by four baghouses/vent baghouses (EP-404, 405A & B, and 405.1). The boiler will produce both bottom ash and fly ash. The bottom ash will be proportionally re-circulated back into the boiler bed or conveyed to the ash storage silo. The limestone storage and transfer systems are controlled by a single vent baghouse (EP-408). The coal steam plant is serviced by an evaporative cooler (EP-406.1 and 406.2).

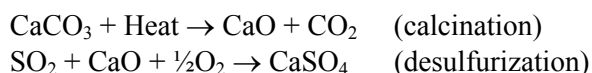
The proposed coal-fired boiler is a 382 million Btu per hour (MMBtu/hr), solid fuel-fired steam generating unit that will utilize circulating fluidized bed (CFB) boiler technology to burn low sulfur coal only. The CFB boiler technology provides inherent control of SO₂ and NO_x by:

- Operating at low combustion temperatures with staged combustion for low thermal NO_x generation; and
- In-bed injection of limestone sorbent for reduction of SO₂ concentrations and to protect internal surfaces from sulfide corrosion

In the furnace section of a CFB boiler, a mixture of fuel, limestone and ash is suspended or “fluidized” in an upwardly flowing gas stream. Although the fuel particles and limestone are solids, the combination of fuel particles, limestone and combustion air exhibit fluid-like properties. Combustion air forced in at the bottom of the furnace keeps the bed in a constantly upward moving flow. At the top of the furnace, relatively large entrained particles are separated from smaller ash particles and combustion gases, and then are returned to the furnace until combustion is complete. It is due to the circulating nature of the fluidized bed that this combustion technology is referred to as a circulating fluidized bed boiler.

Combustion takes place within the furnace “bed” with high furnace heat transfer rates while maintaining low combustion temperatures ranging from 1,500 to 1,650°F. Because thermal NO_x formation is predominately a high temperature process occurring at temperatures in excess of 2,000°F, the lower operating temperature of the CFB boiler technology significantly reduces thermal NO_x production. Additional NO_x control will be provided by a selective non-catalytic reduction (SNCR) system, which injects ammonia (NH₃) into the appropriate high temperature region of the furnace/boiler for conversion of NO_x to N₂ and H₂O.

The addition of limestone to the fluidized bed allows for fuel sulfur removal to occur directly in the boiler, which reduces the corrosion rate of the furnace metal surfaces. The limestone is calcined in the fluid bed forming calcium oxide. The calcium oxide (CaO) reacts with sulfur dioxide (formed from sulfur in the fuel) to form calcium sulfate (CaSO₄). The key reactions are as follows:



Depending upon the calcium to sulfur (Ca:S) ratio within the bed, SO₂ removal rates of 90 to 95 percent can be achieved. Similar high reduction levels will be achieved for sulfuric acid and fluorides.

The U.S. Environmental Protection Agency (USEPA) has determined and imposed Maximum Achievable Control Technology (MACT) limits for emissions of organic and inorganic HAP from solid-fuel fired industrial boilers. Specifically, limits are imposed to regulate emissions of mercury, hydrogen chloride, trace metals, and trace organic compounds from the combustion of solid fuels including coal. In the case

of the trace metals and trace organics, the MACT regulation imposes surrogate limits, which USEPA has determined are effective in limiting emissions of HAP. These surrogate limits impose strict standards on the emissions of fine particulate matter and they effectively regulate the combustion process in a way that helps ensure organic HAP are destroyed in the furnace of the boilers. The new CFB boiler at AGP's soybean processing plant is designed to meet these strict MACT emissions standards for coal, and the boiler must comply with these standards once it becomes operational.

Haul Roads

Haul road emissions consist of truck traffic on the paved roads as part of the receiving of raw materials (coal, lime) or shipping of by-products (fly ash). The haul roads must be in compliance with Condition I.XI of the permit and the modeled emissions levels. Fugitive dust emissions from traffic on these roads have been calculated using a site-specific emission factor based on AP-42 and source supplied silt loading factor, and typical characteristics for paved roads.

PSD-BACT emission limits were used to calculate emissions for all PSD-regulated pollutants, and HCl and mercury emissions are based on the limits in the boiler NESHAP (see Title 129, Chapter 28 discussion below). Emissions of all other HAPs were calculated using AP-42 emissions factors for coal combustions. Criteria pollutant emissions from the CFB boilers will be monitored using required CEMS for NO_x, SO₂, and CO. Stack testing will be required for PM/PM₁₀, F (as HF), H₂SO₄, HCl, and Hg. Potential emissions from the modification are shown in Table 1 below, and detailed emissions calculations are presented in Appendix A.

Table 1 - Source-wide Emissions Summary

Regulated Pollutant	Existing Emissions^a (tons/year)	Proposed Emissions due to CFB Boiler (tons/year)	Post-Modification Emissions (tons/year)
Particulate Matter (PM)	169.5	80.50	249.04
Particulate Matter smaller than or equal to 10 microns (PM ₁₀)	84.46	74.96	159.25
Oxides of Sulfur (SO _x)	40.18	184.05	224.23
Oxides of Nitrogen (NO _x)	62.38	133.85	196.23
Carbon Monoxide (CO)	22.99	250.97	273.96
Volatile Organic Compounds (VOC)	493.50	4.96	499.41
Sulfuric Acid (H ₂ SO ₄)		6.53	6.53
Hazardous Air Pollutants (HAP):			
Acetaldehyde (CAS# 75070)		0.06	0.06
Arsenic Compounds		0.04	0.04
Benzene (CAS# 71432)		0.13	0.13
Benzyl chloride (CAS# 100447)		0.07	0.07
Cyanide Compounds		0.25	0.25
Ethylene Dichloride (CAS# 107062)		0.04	0.04
Formaldehyde (CAS# 50000)	0.046	0.02	0.066
N-Hexane (CAS# 110543)	315.40	0.008	315.41
Hydrochloric Acid (CAS# 7647010)		33.46	33.46
Hydrofluoric Acid (CAS# 7664393)		2.84	2.84
Lead Compounds		0.04	0.04
Manganese Compounds		0.05	0.05
Selenium compounds		0.13	0.13
Miscellaneous HAPs ^b	0.054	0.45	0.50
Total HAPs	315.50	37.59	353.09

^a The existing emissions are based on the Fact Sheet dated 4/17/2006.

^b Miscellaneous HAPs include 2,4-Dinitrotoluene (CAS # 121142), 2-Chloroacetophenone (CAS # 532274), Acetophenone (CAS # 98862), Acrolein (CAS # 107028), Antimony Compounds, Beryllium Compounds, Bis(2-ethylhexyl)phthalate (CAS # 117817), Bromoform (CAS # 75252), Cadmium Compounds, Carbon Disulfide (CAS # 75150), Chlorobenzene (CAS # 108907), Chloroform (CAS # 67663), Chromium Compounds, Cobalt Compounds, Cumene (CAS # 98828), Dimethyl Sulfate (CAS # 77781), Ethyl benzene (CAS # 100414), Ethyl chloride (CAS # 75003), Ethylene Dibromide (CAS # 106934), Isophorone (CAS# 78591), Mercury Compounds, Methyl Bromide (CAS # 74839), Methyl Chloride (CAS# 74873), Methyl Chloroform (CAS # 71556), Methyl Ethyl Ketone (CAS # 78933), Methyl Hydrazine (CAS # 60344), Methyl Methacrylate (CAS # 80626), Methyl tert Butyl Ether (CAS # 1634044), Methylene Chloride (CAS # 75092), Naphthalene (CAS # 91203), Nickel Compounds, Phenol (CAS # 108952), Polycyclic Organic Hydrocarbons (POM), Propionaldehyde (CAS # 123386), Styrene (CAS # 100425), Tetrachloroethylene (CAS # 127184), Toluene (CAS# 108883), Vinyl Acetate (CAS # 108054), and Xylene (CAS # 1330207).

APPLICABLE REQUIREMENTS AND VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS:

National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (Title 129, Chapters 4 and 19)

Prevention of Significant Deterioration

The existing AGP soybean processing facility is considered a major source for PSD purposes as defined by 40 CFR 52.21. The proposed modifications at this existing major source result in an increase in potential emissions of several regulated pollutants. Table 2 shows potential emissions from the new CFB boiler project:

Table 2 - Estimated Potential Emissions from the CFB boiler and PSD Thresholds

Regulated Pollutant^a	Potential Emissions (tons/yr)	PSD Significance Threshold (tons/yr)	Subject to PSD Review?
Particulate Matter (PM)	80.50	25	Yes
Particulate Matter smaller than or equal to 10 microns (PM ₁₀)	74.96	15	Yes
Sulfur Dioxide (SO ₂)	184.05	40	Yes
Oxides of Nitrogen (NO _x)	133.85	40	Yes
Carbon Monoxide (CO)	250.97	100	Yes
Volatile Organic Compounds (VOC)	4.96	40	No
Lead (Pb)	0.04	0.6	No
H ₂ SO ₄ (mist)	6.53	7	No
Fluorides (calculated as HF)	2.84	3	No

As the table illustrates, PM, PM₁₀, SO₂, NO_x and CO are subject to the requirements of Title 129, Chapter 19 - Prevention of Significant Deterioration of Air Quality (PSD). As such, each new unit addressed in this permit will be subject to PSD review for each PSD pollutant emitted.

PSD regulations require that all new or modified major stationary sources submit a BACT analysis and ambient air quality analysis for all criteria and other pollutants emitted over the significant emission increase thresholds listed in 40 CFR 52.21(b)(23). An 'Additional Impact Analysis' must also be conducted as required in 40 CFR 52.21(o).

Air Quality Impact Analysis

This air quality impact analysis for AGP's proposed CFB Coal Boiler project consists of two components. The first component of the air quality analysis consists of a preliminary modeling analysis of all new or modified emission sources at the facility (coal boiler stack, evaporative cooler, lime/fly ash storage silo bin vents, lime/coal/fly ash silo dust collector, and coal conveying system), to determine if the emissions from the new sources would cause ambient pollutant concentrations in excess of 1) concentration thresholds above which preconstruction ambient air quality monitoring may be required, or 2) significant impact levels (SILs), which determine if further modeling is required on a pollutant-by-pollutant basis. The first component analysis was completed for CO, NO₂, PM₁₀, and SO₂.

The second component of the analysis consists of a refined modeling analysis to demonstrate that the proposed facility will not cause or contribute to any violations of applicable Ambient Air Quality Standards (AAQS) or Prevention of Significant Deterioration (PSD) Increments for those pollutants with concentrations above the respective SILs. This analysis includes sources, which contribute to baseline concentrations of each pollutant, and sources that have been determined to consume available increment

for each pollutant. The second component analysis, including of all appropriate regional emission sources (other nearby facilities), was completed for 3-hour, and 24-hour SO₂, because this was the only pollutant and averaging periods for which maximum concentrations from the AGP Coal Boiler project sources were predicted to exceed SILs (first component analysis).

The stack parameters and emission rates for the emission points modeled can be found in the PSD application and in supplemental information received by the Department on November 17, 2005. PSD increment-consuming sources, major or minor, within 50 km of the proposed facility were included in the SO₂ refined analyses.

Preliminary Analysis for Significant Impacts

The purpose of the preliminary dispersion modeling analysis was to determine if emissions from operation of the Coal Boiler and associated new emission sources would cause ambient pollutant concentrations in excess of concentration thresholds above which pre-application ambient air quality monitoring may be required. In addition, the results were reviewed to determine if a SIL would be exceeded for any pollutant. The latest version of the EPA Industrial Source Complex Short-Term dispersion model (ISCST3, Version 5.1.0) was used for this analysis.

The meteorological data used for this analysis consisted of five years (2000-2004) of National Weather Service surface data from the Hastings Municipal Airport in Hastings (station number 94949) and mixing height data for North Platte (station number 24023).

Table 3 shows the results of the SIL and pre-application ambient monitoring threshold analysis. The results indicate that the operation of the AGP Coal Boiler project will not cause a significant impact in the area surrounding AGP for the 1-hour or 8-hour averaging periods for CO, short-term PM₁₀, nor for the annual averaging period for SO₂, NO₂, or PM₁₀. Short-term SO₂ concentrations (3-hr and 24-hr) exceed the SIL, therefore the SO₂ pollutant was further evaluated in the refined modeling analysis.

Table 3 - Maximum Modeled AGP Coal Boiler Project Concentrations, Significant Impact Levels, and Pre-application Monitoring Thresholds

Pollutant	Averaging Period	Modeled Concentration (ug/m ³)	SIL (ug/m ³)	Pre-application Monitoring Threshold Concentration (ug/m ³)
CO	1-hr	43	2,000	NA
	8-hr	32	500	575
SO ₂	Annual	0.35	1.0	NA
	24-hr	12.7	5.0	13
	3-hr	28.7	25.0	NA
PM ₁₀	Annual	0.34	1.0	NA
	24-hr	4.9	5.0	10
NO ₂	Annual	0.39	1.0	14

The modeling impacts for the proposed AGP Coal Boiler project fall below the *Pre-application Ambient Monitoring Thresholds* for all the pollutants. This means that the source will not be required to conduct ambient air monitoring prior to submitting their PSD application in accordance with 40 CFR 52.21(m).

Refined Modeling Analysis for NAAQS and PSD Increment Compliance

The purpose of the final refined modeling analysis was to demonstrate that the proposed facility will not cause or contribute to violations of applicable NAAQS or PSD Increments for SO₂ (3-hour, & 24-hour). Note: refined modeling results are not presented for annual SO₂ emissions, based on the results of the preliminary modeling analysis showed that the annual impacts are insignificant. The AAQS and PSD increments are shown in Table 4. The Nebraska and National AAQS and PSD increments are identical.

**Table 4 - Nebraska and National Ambient Air Quality Standards and PSD Increments
For SO₂^a**

Pollutant	Averaging Period	Ambient Air Quality Standards		PSD Class II Increments	
		National	Nebraska	National	Nebraska
SO ₂	3-hour ^b	1,300	1,300	512	512
	24-hour ^b	365	365	91	91

^a All standards and increments are in units of $\mu\text{g}/\text{m}^3$.

^b Concentration or increment is allowed to be exceeded once per year at a single receptor. A second exceedance of the standard or increment constitutes a violation of the standard.

This ambient air quality impact analysis takes into account the combined impacts of emissions from the existing and proposed AGP sources, contributions from nearby major and minor sources, and background concentrations due to distant major and minor sources and natural sources. Based on the potential emissions from AGP and other sources' allowable and actual emissions, this analysis demonstrates facility compliance with AAQS and PSD Increments for SO₂.

SO₂ Results

The results of the SO₂ increment consumption analysis indicate that the operation of AGP Coal Boiler will not cause an exceedance of the 3-hour or 24-hour allowable PSD increments. Results of the SO₂ PSD increment consumption analysis are summarized in Table 5.

Table 5 - Maximum Predicted SO₂ Increment Consumption

Averaging Period	Year	UTM Coordinates (m)		H2H Increment Consumption ^a	Allowable PSD Increment
		X	Y	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)
3-hour	2000	557,469	4,493,813	111	512
	2001	557,569	4,493,513	116	
	2002	558,169	4,493,013	155	
	2003	557,369	4,493,713	126	
	2004	557,369	4,493,813	105	
24-hour	2000	555,519	4,493,913	36	91
	2001	556,819	4,493,613	32	
	2002	556,869	4,493,313	33	
	2003	555,469	4,493,963	29	
	2004	555,469	4,493,963	30	

NOTE: Values shown are the highest-second-high (H2H) concentrations, since one exceedance of the short-term standard is allowed per year.

The SO₂ results for AAQS compliance are shown in Table 6 for 24-hour and 3-hour concentrations, including contributions from existing sources of SO₂ emissions in the project area. As shown in Table 6, the 24-hour and 3-hour concentrations are predicted to be below the ambient standards.

Table 6 – Maximum Predicted Ambient SO₂ Concentrations

Averaging Period	Year	UTM Coordinates (m)		Background (µg/m ³)	Modeled (µg/m ³)	Total (µg/m ³)	AAQS (µg/m ³)
		X	Y				
3-hour	2000	553,569	4,494,913	120	251	371	1,300
	2001	553,469	4,493,113		262	382	
	2002	553,469	4,495,213		240	360	
	2003	553,569	4,493,713		225	345	
	2004	553,469	4,493,613		214	334	
24-hour	2000	553,469	4,493,213	48	86	134	365
	2001	553,469	4,492,913		114	162	
	2002	553,469	4,492,713		61	109	
	2003	553,469	4,492,313		69	117	
	2004	553,469	4,492,913		86	134	

NOTE: The values shown for the 3-hour and 24-hour averaging periods are the highest-second-high (H2H) results, since one exceedance of the short term standard is allowed per year at each location.

The analyses described above demonstrate that the addition of AGP Coal Boiler will comply with all applicable SO₂ AAQS and PSD increments and will not have a significant impact on annual SO₂, NO₂, or PM₁₀ concentrations, PM₁₀ 24-hour concentrations, or CO 1-hour or 8-hour concentrations.

Additional Impacts Analysis

An Additional Impacts Analysis, as required by 40 CFR 52.21(o), describes air quality and related impacts due to associated growth and construction, as well as potential impacts of atmospheric emissions on soils, vegetation, and visibility impairment. This analysis indicates no adverse impacts. This information is summarized as follows:

A plume visibility screen modeling analysis was performed for this project. Because the nearest Federal Class I areas are several hundred kilometers away from the proposed facility site, the potential impacts at Mormon Island State Recreation Area in Nebraska was evaluated. Mormon Island State Recreation Area is approximately 28 km north and slightly west of AGP.

The PM and NO_x emission rates input to the VISCREEN model was a conservative maximum based on 100% of the design from AGP's Coal Boiler and the proposed emission limits from the permit. The results of the Level 1 screening analysis indicated that emissions from the proposed project would not result in exceedances of the visibility screening criteria inside the identified Class II areas. Therefore, the proposed Coal Boiler project should not decrease the visibility at the nearby Mormon Island State Recreation Area or any Federal Class I area.

As documented in the PSD Application, impacts of the proposed project on soils, vegetation, and visibility from atmospheric emissions are expected to be negligible.

Pre-application monitoring is required under the PSD regulations in 40 CFR 52.21(m)(1) for those modifications at a source that are anticipated to produce ambient concentrations equal to or greater than thresholds indicated in 40 CFR 52.21(i)(8)(i). AGP's preliminary dispersion modeling analysis predicted that the potential ambient impacts would not exceed the monitoring thresholds. As a result pre-application monitoring is not required.

PSD Best Available Control Technology (BACT)

Pursuant to 40 CFR 52.21(j)(3), a major modification shall apply BACT for each regulated NSR pollutant for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emission unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit. BACT is defined as an emission limitation established based on the maximum degree of pollutant reduction, determined on a case-by-case basis, considering technical, economic, energy, and environmental factors. However, BACT cannot be less stringent than emission limits established by an applicable NSPS.

The first step in a BACT analysis is to determine, for the pollutant in question, the most stringent control technology and emission limit available for a similar source or source category. These technologies represent the top control alternative under the BACT analysis. If it can be shown that this level of control is infeasible on the basis of technical, economic, energy, and environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy or environmental consideration.

A “Top-Down” BACT analysis basically consists of the following steps:

- Identify All Control Technologies. All control technologies for similar processes, as well as Lowest Achievable Emission Rate (LAER) technologies are included.
- Eliminate Technically Infeasible Options. Technologies demonstrated to be infeasible based on physical, chemical, and engineering principles are excluded from further consideration.
- Rank Technologies By Control Effectiveness. Technically feasible control technologies are ranked in the order of highest expected emission reduction to lowest expected emission reduction. The ranking also includes expected emission rate, control effectiveness, energy impacts, environmental impacts (including toxic and hazardous air emissions), and economic impacts.
- Control Technology Evaluation. The technology ranking is evaluated and case-by-case consideration is given to energy, environmental, and economic impacts. The most effective option not rejected is chosen as BACT and is used to express an enforceable emission limitation for the affected emission unit.

Appendix B of this Fact Sheet contains a summary of the BACT analysis performed for this project as submitted by the applicant and approved by The Department. A summary of the BACT requirements for the units subject to PSD review is presented in Table 7.

Table 7 – Proposed PSD BACT Limits

EP#	Emission Unit	Pollutant	Emission Limit	Control Type
401	CFB Boiler	PM/ PM ₁₀ (filterable)	0.015 lb/MMBtu	Fabric Filter
		PM/ PM ₁₀ (filterable + condensable)	0.041 lb/MMBtu	Good Combustion Practices
		NO _x	0.08 lb/MMBtu	CFB Technology with SCNR, (NH ₃ injection limited to 10 ppm)
		SO ₂	0.11 lb/MMBtu	Limestone Injection and Fabric Filter
		CO	0.15 lb/MMBtu	Good Combustion Practices
402, 403, 404, 405a, 405b, 405.1, 480, 408.1, 409	Coal, Limestone and Ash Storage and Handling Equipment	PM/PM ₁₀	Limit particulate loading to ≤ 0.005 gr/dscf	Fabric Filter
406	Evaporative Cooler	PM/PM ₁₀	5000 ppm TDS and 0.001%	Limiting Total Dissolved Solids (TDS) and Drift loss %

New Source Performance Standards (NSPS, 40 CFR 60; Title 129, Chapter 18)

Subpart A – General Provisions: NSPS Subpart A, adopted by reference in Title 129, Chapter 18, Section 001.01, applies to those units covered by the specific NSPS as discussed below. The permittee is required to submit notification of the date construction commenced postmarked no later than 30 days after such date (40 CFR 60.7(a)(1)), notification of the anticipated date of initial startup of the equipment postmarked not more than 60 days nor less than 30 days prior to such date (40 CFR 60.7(a)(2)), and notification of the actual date of initial start up of the equipment postmarked within 15 days after such date (40 CFR 60.7(a)(3)).

Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 18, Section 0.001.22, applies to the CFB boiler because the boiler is proposed for installation after June 19, 1984 and has a heat input capacity from fuels combusted of greater than 29 MW (100 MMBtu/hr).

Subpart Y – Standards of Performance for Coal Preparation Plants: This subpart, adopted by reference in Title 129, Chapter 18, Section 001.08, applies to the equipment installed to receive, handle, and process coal for the new CFB boiler because the unit will be constructed after October 24, 1974 and will process more than 200 tons of coal per day.

Process Weight Rate (Title 129, Chapter 20, Section 001)

Each of the permitted emission rate limitations ensures the process weight rate limitations will not be exceeded. The following formulas were used to determine compliance:

for process weight rates up to 60,000 lbs/hr, $E = 4.10 p^{0.67}$, and

for process weight rates in excess of 60,000 lbs/hr, $E = 55.0 p^{0.11} - 40$,

where E = rate of emissions in lbs/hr and
 p = process weight rate in tons/hr.

The facility is in compliance with the process weight rate limitations as illustrated in Appendix A (Emissions Calculations).

Particulate Emissions from Combustion Sources (Title 129, Chapter 20, Section 002)

This facility is in compliance with this regulation because the fuel that is combusted due to this new construction is coal and the potential particulate emissions (controlled by a baghouse) are estimated to be .018 pounds per MMBtu. The allowable emission rate formula per Title 129, Chapter 20, Section 002 and 003 is shown below and equals 0.254 pounds per MMBtu for a 382 MMBtu boiler.

$A = 1.026/I^{0.233}$, where A = allowable emission rate in lb/MMBtu,
and I = total heat input in MMBtu/hr.

Title 129, Chapter 20, Section 004 - Opacity

This rule limits opacity from all equipment at the facility. It is very unlikely the fuel burning equipment would exceed this standard due to the particulate controls on the coal-fired boiler. In addition, the equipment controlled by baghouses is designed to meet this standard.

Sulfur Compounds Emissions (Title 129, Chapter 24)

This facility is in compliance with this regulation because the fuel combusted at this facility is Powder River Basin coal (low sulfur coal) with additional SO₂ controls (limestone injection). The regulation limits sulfur compound emissions from fossil fuel burning to less than 2.5 lbs/MMBtu. The limited emission rate for SO₂ is 0.11 pounds per MMBtu.

Best Available Control Technology (Title 129, Chapter 27, Section 002)

This facility is subject to Best Available Control Technology (BACT) since potential individual HAP emissions exceed 2.5 tons/year and combined HAP emissions exceed 10 tons/year. BACT activities for this source include compliance with the boiler NESHAP (40 CFR Part 63, Subpart DDDDD) and fabric filters.

Maximum Achievable Control Technology (Title 129, Chapter 27, Section 003)

This facility is subject to Maximum Achievable Control Technology (MACT) because the potential emissions exceed 10 tons/year of individual HAP and 25 tons/year of combined HAPs. MACT activities for this source include compliance with the boiler NESHAP (40 CFR Part 63, Subpart DDDDD) and fabric filters.

National Emission Standards for Hazardous Air Pollutants (NESHAP, 40 CFR 63; Title 129, Chapter 28)

Subpart DDDDD – Industrial, Commercial and Institutional Boilers and Process Heaters: This subpart was promulgated September 13, 2004 (69 FR 55253, Federal Register, Vol. 69, No. 176, pages 55218 to 55286). This subpart, adopted by reference in Title 129, Chapter 28, Section 001.90, applies to boilers and process heaters that are located at major HAP sources (≥ 10 tons/year of individual HAP or ≥ 25 tons/year of combined HAPs). The CFB boiler at this facility is subject to this subpart because the facility has combined HAP emissions greater than 25 tons per year.

The CFB boiler is considered new large solid fuel unit and must also be in compliance with this rule upon startup and is subject to the emission limitations as shown in Table 8:

Table 8. Boiler NESHAP Requirements

Pollutant	Emission Limits
PM (or Total Selected Metal*)	0.025 lbs/MMBtu (or 0.0003 lbs/MMBtu)
CO	400 ppm by volume on a dry basis corrected to 7 percent oxygen based on 30-day rolling average
Hydrochloric acid (HCl)	0.02 lbs/MMBtu
Mercury compounds	0.000003 lbs/MMBtu

* Total Selected Metal (TSM) is defined as the combination of arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium compounds.

Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers: This subpart applies to industrial process cooling towers that are operated with chromium-based water treatment chemicals and are located at major facilities for HAPs (≥ 10 tons/year of individual HAP or ≥ 25 tons/year of combined HAPs). This facility is not subject to this subpart because no chromium-based water treatment chemicals were reported to be used for the evaporative cooler.

Permit conditions specific to the proposed emission points in the permit are discussed as follows:

Facility Wide Specific Condition 2.I: Potential emissions associated with this modification. Emissions are estimated at maximum rates at 8,760 hours per year of operation.

Facility Wide Specific Conditions 2.II: Stack testing requirements per Title 129, Chapter 34. The test methods are not specified because test methodology change over time with advances in technology. The facility must submit a protocol for the testing and identify the proposed test methodology. If there is a change in testing procedures, the NDEQ will notify the facility at the time the protocol is submitted and reviewed.

Facility Wide Specific Conditions 2.III: Recordkeeping requirements are to demonstrate compliance with other permit conditions and to ensure records are maintained accurately and are up-to-date.

Facility Wide Specific Conditions 2.IV: These requirements are to ensure that the assumptions used in the NAAQS and PSD Increment modeling analyses were correct. The hourly emission limits or other emission point limitations were also used as assumptions in the NAAQS modeling analyses.

Facility Wide Specific Condition 3: This table lists each emission point and the stack heights that were assumed in the NAAQS and PSD Increment modeling.

Emission Point Specific Conditions for the CFB boiler {EP # 401}:

- I. Emission limits are established to limit emissions to demonstrate compliance with NAAQS modeling (Title 129, Chapter 4) and/or PSD (Title 129, Chapter 19). Compliance with the lbs/hr emission limit (NAAQS and/or PSD) will demonstrate compliance with the NSPS emission limit. The NESHAP, Subpart DDDDD limits are included in this section. Pollutants and operational limitations that require performance testing are identified.
- II. This condition identifies any control method or equipment that is used for the associated emission point. The control equipment must be maintained and operated properly. Regular maintenance, observations and immediate corrective actions ensure that the control equipment is operating in a similar condition as during the stack testing and per manufacturer's requirements.
- III. The NSPS, Subpart Db and NESHAP, Subpart DDDDD are identified for the CFB boiler that is subject.
- IV. The specific recordkeeping requirements for the CFB boiler are identified.
- V. The specific reports or submittals that are required for the CFB boiler are listed.
- VI. Other requirements include: (A) Fuel type limitation for the boiler to demonstrate compliance with Title 129, Chapter 4, 19 and 24.

Emission Point Specific Conditions for coal receiving, handling and storage {EP # 402, 403, 408.1 and 409}:

- I. Particulate matter emission limits are established to limit emissions to demonstrate compliance with NAAQS modeling (Title 129, Chapter 4) or PSD (Title 129, Chapter 19). Additionally, applicable coal preparation plants are also subject to NSPS Subpart Y opacity limit of <20%. Pollutants and operational limitations that require performance testing are identified.
- II. This condition identifies the control method or equipment that is used for the associated emission point. The control equipment must be maintained and operated properly. Regular maintenance, observations and immediate corrective actions ensure that the control

- equipment is operating in a similar condition as during the stack testing and per manufacturer's requirements.
- III. The NSPS, Subpart A and Y are identified for the emission points.
 - IV. The specific recordkeeping requirements for each baghouse are listed.
 - V. The specific reports or submittals that are required for each emission point are listed.

Emission Point Specific Conditions for fly ash handling, loading and storage {EP # 404, 405a and 405b}:

- I. Particulate matter emission limits are established to limit emissions to demonstrate compliance with NAAQS modeling (Title 129, Chapter 4) or PSD (Title 129, Chapter 19). Pollutants and operational limitations that require performance testing are identified.
- II. This condition identifies the control method or equipment that is used for the associated emission point. The control equipment must be maintained and operated properly. Regular maintenance, observations and immediate corrective actions ensure that the control equipment is operating in a similar condition as during the stack testing and per manufacturer's requirements.
- IV. The specific recordkeeping requirements for each baghouse are listed.

Emission Point Specific Conditions for evaporative cooler {EP # 406}:

- I. The total dissolved solids concentration (TDS) and the drift loss % limitations are required to limit the amount of particulate matter emissions emitted from the evaporative cooler, which is to demonstrate compliance with NAAQS and PSD Increment.
- II. The evaporative coolers are installed, operated, and maintained, which will allow the unit to operate efficiently. This condition demonstrates compliance with Title 129, Chapters 4 and 19.
- IV. The specific recordkeeping requirements for the evaporative cooler are listed.
- VI. The TDS concentration is required to be tested monthly due to the variability of the TDS concentration in the water used in the cooling tower.

Emission Point Specific Conditions for the limestone storage bunker {EP # 408}:

- I. Particulate matter emission limits are established to limit emissions to demonstrate compliance with NAAQS modeling (Title 129, Chapter 4) or PSD (Title 129, Chapter 19). Pollutants and operational limitations that require performance testing are identified.
- II. This condition identifies the control method or equipment that is used for the associated emission point. The control equipment must be maintained and operated properly. Regular maintenance, observations and immediate corrective actions ensure that the control equipment is operating in a similar condition as during the stack testing and per manufacturer's requirements.
- IV. The specific recordkeeping requirements for each baghouse are listed.

Emission Point Specific Conditions for Haul Roads {EP # 410}:

- I. Haul road emissions must be controlled to prevent off-site transport of fugitive particulate matter and to ensure compliance with silt loading limits. This requirement is also to limit PM and PM₁₀ emissions to comply with NAAQS standards. This condition also includes requirements to test haul road silt loading. The reason the testing is required quarterly is due to the change in road conditions throughout the year (seasonal). The 0.4 g/m² silt load limit and testing requirement were incorrectly stated when the documents were public noticed. This condition will be revised by the Department to allow a silt load limit of 3.0 g/m² and require BMPs for dust control.
- II. The facility must develop a fugitive dust control plan (FDCP) to control particulate emissions from the haul roads. If the visible fugitive emissions go beyond the property line, then the facility may be in violation of Condition 1.XI. The FDCP should outline the methods,

frequencies and triggers for when implementation of fugitive dust controls will be utilized based on daily surveys and silt load testing. If testing shows that the silt loading cannot be met with the current FDCP, then additional testing and/or revision of the FDCP is required to show consistent compliance with the silt loading limit.

- IV. Records of fugitive dust control methods including fugitive dust control plan, test results, daily surveys and documentation of implementation of control methods.
- V. A copy of the original FDCP must be submitted to the department and a copy of each subsequent revision.
- VI. Other requirements include (A) paving facility haul roads; (B) conducting daily property surveys; (C) implementation of fugitive dust controls; and (D) documenting implementation of fugitive dust control measures and surveys. Visible emissions are an indicator that the haul roads may need to be cleaned or have additional controls implemented to prevent off-site transport of particulate matter and possible non-compliance with the silt load limit.

STATUTORY OR REGULATORY PROVISIONS ON WHICH PERMIT REQUIREMENTS ARE BASED:

Applicable regulations: Title 129 - Nebraska Air Quality Regulations as amended March 14, 2006.

PROCEDURES FOR FINAL DETERMINATION WITH RESPECT TO THE PROPOSED CONSTRUCTION PERMIT:

The public notice, as required under NAQR Chapter 14, shall be published on July 17, 2006, in the Hastings Tribune newspaper. Persons or groups shall have 30 days from that issuance of public notice (August 15, 2006) to provide the NDEQ with any written comments concerning the proposed permit action and/or to request a public hearing, in accordance with NAQR Chapter 14. If a public hearing is granted by the Director, there will be a notice of that meeting published at least 30 days prior to the hearing. Persons having comments or requesting a public hearing may contact:

W. Clark Smith-Permitting Section Supervisor
Air Quality Division
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, Nebraska 68509-8922

If no public hearing is requested, the permit may be granted at the close of the 30-day comment period. If a public hearing is requested, the Director of the NDEQ may choose to extend the date on which the permit is to be granted until after that public hearing has been held. During the 30-day comment period, persons requiring further information should contact:

Debra McDowell, P.E.-Environmental Engineer
Air Quality Division-Permitting Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, Nebraska 68509-8922

Telephone inquiries may be made at: (402) 471-2189

TDD users please call 711 and ask the relay operator to call us at (402) 471-2186.

RE: RESPONSE SUMMARY

**Ag Processing, Inc.
2801 E. 7th Street
Hastings, NE 68901-5560**

NDEQ Facility #72698

To Whom It May Concern:

The Department has considered all comments received and has made a final decision to modify and issue the Construction Permit for the above referenced facility. This Permit approves the construction of a new coal-fired boiler and support equipment in accordance with regulations contained in Title 129 - Air Quality Regulations.

The decision regarding issuance of this Construction Permit may be appealed under Neb. Rev. Stat. 81-1509. This appeal shall be done in accordance with the Administrative Procedure Act, Neb. Rev. Stat. Section 84-901 to 84-920 and Title 115 - Rules of Practice and Procedure.

In preparing this summary, the Department reviewed all comments made during the public comment period from July 17, 2006, to August 15, 2006, and listed all comments in the attached Responsiveness Summary. The Responsiveness Summary consists of four sections:

Comment #: The comment is summarized.

Response and Rationale: Department's response to the comment raised and the rationale.

Changes: Any changes to the Permit and/or Fact Sheet are addressed.

Applicable Regulations/Statutes: This is a listing of regulations/statutes pertinent to the comment.

The Department appreciates the time and the conscientious efforts of all that have commented. If you have any questions, please contact Clark Smith or me at (402) 471-2189.

Sincerely,

{Original Signed}

9/11/06

Shelley Kaderly
Air Quality Division Administrator

Date

Enclosure

RESPONSE TO PUBLIC COMMENTS SUMMARY
On the Issuance of a Construction Permit for
Coal-fired Boiler Project (Facility #72698)

Background Information:

Ag Processing, Inc. (AGP) submitted a Prevention of Significant Deterioration (PSD) Construction Permit application on November 17, 2005. This permit approves the construction of a new coal-fired boiler and support equipment.

During the public comment period, The Department received comments from EPA Region VII in Kansas City, Kansas. The following are the Department's responses to the comments received during the public comment period:

COMMENT #1:

EPA requested that AGP supplement its application with additional detail as to why a NO_x limit of 0.07 lbs/MMBtu or lower cannot be met. The NO_x limit in the permit is 0.08 lbs/MMBtu and the EPA did not feel the applicant had justified the higher limit when other boilers are achieving the lower limit.

RESPONSE AND RATIONALE:

AGP submitted a supplemental BACT analysis to the department on May 5, 2006. This analysis explored the NO_x limits of similarly sized boilers burning coal only. The data for smaller boilers (<1,000 MMBtu/hour) is very limited because most boilers utilizing CFB technology are much larger than the proposed unit. The data presented three fluidized bed boilers of similar size, all with NO_x limits higher than the permit limit of 0.08 lb/MMBtu. Additionally, all three boilers will likely run at or near full load because they are installed at a utility or provide steam for a single facility. The Department is aware of other operational CFB boilers (ADM – Cedar Rapids) that have been permitted at 0.07 lb NO_x/MMBtu; however, this boiler had a difficult time meeting the limit during times of cold start up and the facility has asked to have this period excluded for compliance determination. Additionally, this boiler is considerably larger and combusts fuels other than low sulfur coal.

Because NO_x limits have a 30-day averaging period, there is time for the boilers to “make-up” for any compliance issues that may occur while operating for brief periods at low load. Because the boiler at this facility will provide steam to three different processes, steam demands are anticipated to vary and limits the ability of the facility to average the emissions over the 30-day averaging period as discussed in the supplement.

The applicant submitted additional analysis from their boiler vendor to the department in an e-mail sent on August 25, 2006. The document titled, “AGP Hastings Emission Levels Discussion” provides further explanation of the relationship between NO_x, SO₂ and CO emissions for the CFB boiler. Several factors are discussed in the document but it's apparent that low sulfur coals require an inherently higher Ca/S ratio to achieve the same percent reduction of sulfur as a higher sulfur fuel because sulfur is only captured when it is in close proximity to the calcium. Alternatively, NO_x emissions are minimized when the Ca/S ratio is limited. CaO acts as a catalyst for oxidizing nitrogen-containing compounds released as volatiles to NO_x. As the Ca/S ratio is increased to promote greater SO₂ reduction, the NO_x generation increases. Therefore, to achieve sufficient sulfur reduction with low sulfur coal, a resultant NO_x increase occurs.

Based on this information, the Department concurs with the facility's BACT analysis of 0.08 lb NO_x/MMBtu.

RESPONSE TO PUBLIC COMMENTS SUMMARY
On the Issuance of a Construction Permit for
Coal-fired Boiler Project (Facility #72698)

CHANGES:

No changes were made.

APPLICABLE REGULATIONS:

Title 129, Chapter 19 – Prevention of Significant Deterioration

COMMENT #2:

The EPA expressed that the BACT analysis falls short of presenting the expected sulfur content of the low sulfur coal that is proposed to be combusted in the CFB boiler and does not provide adequate justification for selecting an emission limit of 0.11 lb SO₂/MMBtu. The EPA further commented that the sulfur content of the proposed coal source is well characterized and that the BACT limit should be lower, assuming 90% or greater emission control. Additionally, the EPA commented that the fuel to be burned in the boiler is referred to as both low sulfur coal and sub bituminous coal in the permit and associated fact sheet.

RESPONSE AND RATIONALE:

The applicant indicated that the design BTU content for this boiler is 8,500 BTU per pound (letter to NDEQ dated June 14, 2006) and the inlet sulfur would be consistent with the characterization of the coal combusted by Whelan Energy as provided by the EPA. CFB boilers have typically burned fuels other than coal, high sulfur coal or coal in combination with other fuels and emission data is readily available for these facilities; however, no data is available with regard to the SO₂ emissions from a CFB boilers burning low sulfur fuel exclusively. Additionally, EPA could not provide any information on similar CFB boilers that are achieving the lower SO₂ levels on a consistent basis.

With no historical operational data available, the applicant presented information with regard to the physical limits of the chemical reaction between sulfur and calcium oxide, the inherent SO₂ control associated with limestone injection. The department reviewed the data presented and concluded with the applicant that the selection of the BACT limit, 0.11 lbs SO₂/MMBtu was appropriate.

The EPA expressed a desire that the NDEQ should set a SO₂ BACT limit with a 92-95% control efficiency. The applicant indicated in their BACT analysis that control efficiencies at that high level could only be attained with add-on controls such as a wet or dry scrubber. These control options were determined to be economically infeasible. The BACT analysis concluded that a CFB boiler with limestone injection was the appropriate selection. It is expected that the SO₂ removal efficiencies in a CFB boiler burning low sulfur coal will decline as the inlet sulfur concentrations decrease. Therefore, high removal efficiencies with low sulfur coal cannot be maintained.

The document titled, “AGP Hastings Emission Levels Discussion” provides supplemental information as to the relationship between SO₂ and NO_x emissions. It appears that an increase in the Ca/S ratio may provide greater SO₂ control but a subsequent increase in the NO_x emissions will occur. However, the Ca/S ratio is reaction limited and at some point, additional limestone will provide an insignificant sulfur reduction with a corresponding NO_x increase. The department has concurred that combustion emissions from CFB boilers are interrelated and that a balance of emissions is preferred over the life of the unit.

RESPONSE TO PUBLIC COMMENTS SUMMARY
On the Issuance of a Construction Permit for
Coal-fired Boiler Project (Facility #72698)

CHANGES:

Additional discussion was added to the Fact Sheet detailing the origin and type of coal to be burned at the facility. This sentence was added to page 1 of the Fact Sheet: Low sulfur coal from the Powder River Basin (sub bituminous) will be the primary fuel for the CFB boiler.

No other changes were made.

APPLICABLE REGULATIONS:

Title 129, Chapter 19 – Prevention of Significant Deterioration

COMMENT #3:

The silt load limit was stated in the permit as 0.40 g/m^2 and in the fact sheet calculations in Appendix A as 3.00 g/m^2 .

RESPONSE AND RATIONALE:

The original permit application requested a silt load limit of 0.40 g/m^2 ; however, in a letter to the department dated May 5, 2006, the facility requested that the silt load limit be increased to 3.0 g/m^2 to match the silt load limit in a recently issued permit for the same facility (state construction permit issued 4/17/06 to Facility #72698). Because the PM_{10} modeling was below the significance level, no impact to the ambient air is anticipated do to the potential increases in haul road emissions.

However, not all of the permit documents were updated to reflect the facility's request. The Department has determined that the 3.0 g/m^2 silt load limit was the correct limit and the emission calculations included in the public noticed documents accurately presented the total facility emissions at the higher silt load rate. Therefore, the Department will issue the permit as public noticed and subsequently reopen the permit for cause to formally change the permit silt load condition in the construction permit from 0.40 g/m^2 to 3.0 g/m^2 .

CHANGES:

The following notation was included in the discussion for this specific condition in that fact sheet:

The 0.4 g/m^2 silt load limit and testing requirement were incorrectly stated when the documents were public noticed. This condition will be revised by the Department to allow a silt load limit of 3.0 g/m^2 and require BMPs for dust control.

APPLICABLE REGULATIONS:

Not Applicable

RESPONSE TO PUBLIC COMMENTS SUMMARY
On the Issuance of a Construction Permit for
Coal-fired Boiler Project (Facility #72698)

COMMENT #4:

Several typographical changes are present throughout the permit relating to a reference to Condition 1.XI. condition was incorrectly referenced as Condition 1.X.

RESPONSE AND RATIONALE:

The Department agrees that the referenced changes should be made.

CHANGES:

All references to Condition 1.X were changed to 1.XI in the construction permit and fact sheet.

APPLICABLE REGULATIONS:

Not Applicable

Questions regarding this summary may be directed to:

Air Quality Division-Permitting Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, NE 68509-8922

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

Criteria Pollutant Summary

Emission EP ID #	Emission Sources Associated with Coal Boiler Operations	Criteria Pollutants (Limited Emissions)						
		PM (tpy)	PM ₁₀ (tpy)	SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	VOC (tpy)	H ₂ SO ₄ (tpy)
401	CFB Coal Boiler with Limestone Injection	68.60	68.60	184.05	133.85	250.97	4.93	6.53
402	Coal Dump & Handling	3.00	3.00					
403	Coal Silo Dust Collector	0.17	0.17					
404	Fly Ash Handling & Loadout	0.34	0.34					
405A	Fly Ash Silo Dust Collector	0.51	0.51					
405B	Fly Ash Silo Dust Collector	0.51	0.51					
405.1	Fly Ash Silo Bin Vent	0.004	0.004					
406	Evaporative Cooler	0.04	0.02					
408	Limestone Bunker Bin Vent	0.17	0.17					
408.1	Recycle Bunker Bin Vent	0.17	0.17					
409	Recycle Surge Bin Vent	0.17	0.17					
410	Road Emissions from Coal Trucks	6.68	1.30					
AGP SOY PLANT - COAL BOILER		80.35	74.96	184.05	133.85	250.97	4.93	6.53

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

Hazardous Air Pollutant Emissions Summary

Pollutant	CAS #	Potential Emissions (tpy)
Hydrochloric acid	7647010	33.46
Hydrofluoric acid	7664393	2.84
Lead Compounds		0.04
Acetaldehyde	75070	0.06
Arsenic Compounds		0.04
Benzene	71432	0.13
Benzyl chloride	100447	0.07
Cyanide Compounds		0.25
Ethylene dichloride	107062	0.04
Formaldehyde	50000	0.02
N-Hexane	110543	7.92E-03
Manganese Compounds		0.05
Selenium Compounds		0.13
Miscellaneous Haps ¹		0.45
Total HAPs		37.59

Miscellaneous HAPs include 2,4-Dinitrotoluene (CAS # 121142), 2-Chloroacetophenone (CAS # 532274), Acetophenone (CAS # 98862), Acrolein (CAS # 107028), Antimony Compounds, Beryllium Compounds, Bis(2-ethylhexyl)phthalate (CAS # 117817), Bromoform (CAS # 75252), Cadmium Compounds, Carbon Disulfide (CAS # 75150), Chlorobenzene (CAS # 108907), Chloroform (CAS # 67663), Chromium Compounds, Cobalt Compounds, Cumene (CAS # 98828), Dimethyl Sulfate (CAS # 77781), Ethyl benzene (CAS # 100414), Ethyl chloride (CAS # 75003), Ethylene Dibromide (CAS # 106934), Isophorone (CAS# 78591), Mercury Compounds, Methyl Bromide (CAS # 74839), Methyl Chloride (CAS# 74873), Methyl Chloroform (CAS # 71556), Methyl Ethyl Ketone (CAS # 78933), Methyl Hydrazine (CAS # 60344), Methyl Methacrylate (CAS # 80626), Methyl tert Butyl Ether (CAS # 1634044), Methylene Chloride (CAS # 75092), Naphthalene (CAS # 91203), Nickel Compounds, Phenol (CAS # 108952), Polycyclic Organic Hydrocarbons (POM), Propionaldehyde (CAS # 123386), Styrene (CAS # 100425), Tetrachloroethylene (CAS # 127184), Toluene (CAS# 108883), Vinyl Acetate (CAS # 108054), and Xylene (CAS # 1330207).

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

CFB Coal Boiler Criteria Emissions

Heat Input Rating:	382	MMBtu/hour ¹	
Heat Value:	8,500	Btu/lb	
Fuel Feed Rate:	22.5	tons/hour	
	197,100	tpy	
70% Load ²	267.4	MMBtu/hour	(low load condition)

Criteria Pollutant	Condition	Requested Limit	Units	Emissions (lb/hour)	Emissions (tpy)
PM/PM ₁₀	filterable	0.015	lb/MMBtu	5.73	25.10
PM/PM ₁₀	filterable + condensable	0.041	lb/MMBtu	15.66	68.60
SO _x		0.11	lb/MMBtu	42.02	184.05
NO _x	at loads \geq 70%	0.08	lb/MMBtu	30.56	133.85
NO _x	at loads < 70%	30.56	lb/hour	30.56	na
CO	at loads \geq 70%	0.15	lb/MMBtu	57.30	250.97
CO	at loads < 70%	57.30	lb/hour	57.30	na
VOC		0.05	lb/ton	1.13	4.93
H ₂ SO ₄		0.0039	lb/MMBtu	1.49	6.53

¹Revised Heat Input rating, letter from Thompson Environmental Consulting, Inc. 5/5/2006

²The "low load" lb/hr limits apply only to NO_x and CO emissions when the boiler is operated below 70% of maximum rated load (382 MMBtu/hour). The low load emission rate is based on the lb/hour equivalent emissions at a boiler rate of 100% of the heat input rating of 382 MMBtu/hr

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

HAP Emissions Calculation

Max. Heat Input Rate: 382 MMBtu/hour
 Max Fuel Feed Rate: 22.5 tons/hour
 197,100 tpy

Pollutant	CAS #	Emission Factor (lbs/MMBtu) ^a	Potential Emissions (lbs/hr)	Potential Emissions (tpy)
Hydrochloric acid	7647010	0.02	7.64	33.46
Hydrofluoric acid	7664393	0.0017	0.65	2.84
Mercury Compounds		3.00E-06	1.15E-03	5.02E-03
		(lbs/ton coal) ^b		
2,4-Dinitrotoluene	121142	2.80E-07	6.30E-06	2.76E-05
2-Chloroacetophenone	532274	7.00E-06	1.58E-04	6.90E-04
Acetaldehyde	75070	5.70E-04	1.28E-02	5.62E-02
Acetophenone	98862	1.50E-05	3.38E-04	1.48E-03
Acrolein	107028	2.90E-04	6.53E-03	2.86E-02
Antimony Compounds		1.80E-05	4.05E-04	1.77E-03
Arsenic Compounds		4.10E-04	9.23E-03	4.04E-02
Benzene	71432	1.30E-03	2.93E-02	1.28E-01
Benzyl chloride	100447	7.00E-04	1.58E-02	6.90E-02
Beryllium Compounds		2.10E-05	4.73E-04	2.07E-03
Bis(2-ethylhexyl)phthalate	117817	7.30E-05	1.64E-03	7.19E-03
Bromoform	75252	3.90E-05	8.78E-04	3.84E-03
Cadmium Compounds		5.10E-05	1.15E-03	5.03E-03
Carbon disulfide	75150	1.30E-04	2.93E-03	1.28E-02
Chlorobenzene	108907	2.20E-05	4.95E-04	2.17E-03
Chloroform	67663	5.90E-05	1.33E-03	5.81E-03
Chromium Compounds		2.60E-04	5.85E-03	2.56E-02
Cobalt Compounds		1.00E-04	2.25E-03	9.86E-03
Cumene	98828	5.30E-06	1.19E-04	5.22E-04
Cyanide Compounds		2.50E-03	5.63E-02	2.46E-01
Dimethyl sulfate	77781	4.80E-05	1.08E-03	4.73E-03
Ethyl benzene	100414	9.40E-05	2.12E-03	9.26E-03
Ethyl chloride	75003	4.20E-05	9.45E-04	4.14E-03
Ethylene dibromide	106934	1.20E-06	2.70E-05	1.18E-04
Ethylene dichloride	107062	4.00E-04	9.00E-03	3.94E-02
Formaldehyde	50000	2.40E-04	5.40E-03	2.37E-02
Hexane	110543	6.70E-05	1.51E-03	6.60E-03
Isophorone	78591	5.80E-04	1.31E-02	5.72E-02
Lead Compounds		4.20E-04	9.45E-03	4.14E-02
Manganese Compounds		4.90E-04	1.10E-02	4.83E-02
Methyl bromide	74839	1.60E-04	3.60E-03	1.58E-02
Methyl chloride	74873	5.30E-04	1.19E-02	5.22E-02
Methyl chloroform	71556	2.00E-05	4.50E-04	1.97E-03
Methyl ethyl ketone	78933	3.90E-04	8.78E-03	3.84E-02
Methyl hydrazine	60344	1.70E-04	3.83E-03	1.68E-02
Methyl methacrylate	80626	2.00E-05	4.50E-04	1.97E-03
Methyl tert butyl ether	1634044	3.50E-05	7.88E-04	3.45E-03
Methylene chloride	75092	2.90E-04	6.53E-03	2.86E-02
Naphthalene	91203	1.30E-05	2.93E-04	1.28E-03
Nickel Compounds		2.80E-04	6.30E-03	2.76E-02
Phenol	108952	1.60E-05	3.60E-04	1.58E-03
Polycyclic Organic Matter		7.76E-06	1.75E-04	7.65E-04
Propionaldehyde	123386	3.80E-04	8.55E-03	3.74E-02
Selenium Compounds		1.30E-03	2.93E-02	1.28E-01
Styrene	100425	2.50E-05	5.63E-04	2.46E-03
Tetrachloroethylene	127184	4.30E-05	9.68E-04	4.24E-03
Toluene	108883	2.40E-04	5.40E-03	2.37E-02
Vinyl Acetate	108054	7.60E-06	1.71E-04	7.49E-04
Xylenes	1330207	3.70E-05	8.33E-04	3.65E-03
Total HAPs			0.94	37.59

^a The emission factors are in lbs/MMBtu based on proposed HAP-MACT limits or PSD avoidance limits.

^b Emission factors from AP-42 Tables 1.1-13, 1.1-14, and 1.1-18.

Methodology

Potential Emissions (lbs/hr) = Max. Heat Input Rate (MMBtu/hr) x Emission Factor (lbs/MMBtu)

Potential Emissions (lbs/hr) = Max. Fuel Feed Rate (tons/hour) x Emission Factor (lbs/ton)

Potential Emissions (tons/yr) = lbs/hr x (8,760 hr/yr) x (1 ton/2,000 lbs)

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

Dust Collection Emission Calculations

Emission Point (EP)	Unit	Exhaust Rate (scfm)	Process Rate (tons/hour)	Loading Limit (grains/scfm)	Emissions (lbs/hour)	Allowables ^a (lbs PM/hr)	PM/PM ₁₀ Emissions (tpy)
402	Coal Dump & Handling	16,000	22.5	0.005	0.686	33.02	3.00
403	Coal Silo Dust Collector	900	22.5	0.005	0.039	33.02	0.17
404	Fly Ash Handling & Loadout	1,800	22.5	0.005	0.077	33.02	0.34
405A	Fly Ash Silo Dust Collector	2,700	22.5	0.005	0.116	33.02	0.51
405B	Fly Ash Silo Dust Collector	2,700	22.5	0.005	0.116	33.02	0.51
405.1	Fly Ash Silo Bin Vent	50	22.5	0.002	0.001	33.02	3.75E-03
408	Limestone Bunker Bin Vent	900	22.5	0.005	0.039	33.02	0.17
408.1	Recycle Bunker Bin Vent	900	22.5	0.005	0.039	33.02	0.17
409	Recycle Surge Bin Vent	900	22.5	0.005	0.039	33.02	0.17
Totals					1.149		5.03

^a Title 129, Chapter 20 emission limits

Methodology

PM/PM₁₀ (lb/hr) = Exhaust Rate (scfm) x Grain Loading Limit (gr/dscf) x (60 min/hr) x (1 lb/7,000 grains)

PM/PM₁₀ (tpy) = lb/hr x (8760 hrs/year) x (1 ton/2,000 lbs)

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

Evaporative Cooler

Basis: Mass balance calculations based on circulation rates, TDS, & drift loss.
Cooling water has a presumed density of 8.34 lb/gal.
All parameters set based on manufacturers and/or facility information.
Drift loss based on specification provided by cooling tower vendor.

Pollutant	Circulation (gal/hr)	TDS (ppm)	Drift Loss (%)	Op hours (hr/yr)	PTE (lb/hr)	PTE (tpy)
PM	22,800	5,000	0.001	8,760	0.010	0.04
*PM ₁₀	22,800	5,000	0.001	8,760	0.005	0.02

$\text{PTE PM (lb/hr)} = \text{Circulation (gal/hr)} \times \text{Density (lb/gal)} \times \text{TDS (ppm)} \times \text{Drift loss (\%)} / 1,000,000$

$\text{PTE PM (tpy)} = \text{PTE PM/PM}_{10} \text{ (lb/hr)} \times \text{Operating hr/yr} \times 1 \text{ ton}/2,000 \text{ lbs}$

*PM10 emissions equal approximately 50% of PM emissions per an AWMA report

Appendix A: Emission Calculations
AGP, Inc. Soy Bean Processing Plant

Haul Road Emission Calculations

$$E = [(k \times (sL/2)^{0.65}) \times ((W/3)^{1.5} - C) \times (1-P/4N)]$$

AP-42, Section 13.2.1.3 (12/03)

Factor	Description	Source	PM Value	PM ₁₀ Value
E =	Emission factor (lb/VMT, vehicle miles traveled)	Calculation, above	2.55	0.50
k =	Particle size multiplier (lb/VMT)	AP-42, Table 13.2.1-1	0.08	0.02
sL =	Road surface silt loading (g/m ²)	Engineering Estimate	3.00	3.00
C =	Exhaust emission factor (lb/VMT)		0.0005	0.0005
P =	Number of "wet" days during an averaging period		95.00	95.00
N =	Number of days in the averaging period		365.00	365.00
W =	Average vehicle weight (ton)	Engineering Estimate	26.03	26.03

PM Emissions from Paved Roads

Activity	Quantity Transported per truck	No. of Trucks (truck/yr)	Miles Traveled per Truck (miles/truck)	Annual Mileage (VMT/yr)	Uncontrolled PM Emissions (lb/yr)	Uncontrolled PM Emissions (tpy)
Coal Trucks	31 ton	6,358	0.670	4,260	10,860	5.43
Lime Trucks	22 ton	730	0.670	489	1,247	0.62
Ash Trucks	20 ton	730	0.670	489	1,247	0.62
Total					12,107	6.68

PM₁₀ Emissions from Paved Roads

Activity	Quantity Transported per truck	No. of Trucks (truck/yr)	Miles Traveled per Truck (miles/truck)	Annual Mileage (VMT/yr)	Uncontrolled PM ₁₀ Emissions (lb/yr)	Uncontrolled PM ₁₀ Emissions (tpy)
Coal Trucks	31 ton	6,358	0.670	4,260	2,119	1.06
Lime Trucks	22 ton	730	0.670	489	243	0.12
Ash Trucks	20 ton	730	0.670	489	243	0.12
Total					2,363	1.30

Truck Weight Calculation

Coal Shipping

Distance Empty	60% of round trip =	2556 miles/year
Empty Weight	14	
Distance Full	40% of round trip =	1704 miles/year
Full Weight	45	

Lime Shipping

Distance Empty	60% of round trip =	293 miles/year
Empty Weight	14	
Distance Full	40% of round trip =	196 miles/year
Full Weight	36	

Ash Shipping

Distance Empty	40% of round trip =	196 miles/year
Empty Weight	14	
Distance Full	60% of round trip =	293 miles/year
Full Weight	34	

Weighted Average = 26.03 tons/vehicle